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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/617,227

07/11/2003

Minoru Hasegawa

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7590

03/24/2005

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EXAMINER

HODGES, MATTHEW P

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/617,227

Applicant(s)

HASEGAWA ET AL.

Examiner

Matt P. Hodges

Art Unit

2879

*sm*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/11/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/11/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group I in the reply filed on 1/11/2005 is acknowledged.

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Specifically the title should be directed to an aspect of the claimed invention to distinguish from other plasma display panels.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 2003/0038599) in view of Uemura et al. (US 6,650,063).

Regarding claims 1-4 and 10, Aoki discloses (see figure 1) a gas discharge panel including a rear substrate (21), barrier ribs (24), a phosphor layer (25), a front substrate (11) formed opposite the rear substrate, electrodes (12 and 13), a dielectric layer (14), and a protection layer (15) of MgO. (Page 2 paragraph 34). Further the dielectric layer is polysiloxane

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including a side chain of alkyl groups. (Page 2 paragraph 44) (Page 3 paragraphs 55 and 62).

Aoki does not appear to disclose the use of a second dielectric layer between the organic dielectric layer and the protection layer, however Uemura, in the same field of endeavor, discloses the use of a thin inorganic dielectric layer made of  $\text{TiO}_2$  formed between the protection layer and the first dielectric layer. (Column 3 lines 27-38). This second dielectric layer advantageously prevents cracking in the protection layer by more gradually matching the thermal expansion from the outer to inner layers. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate a second inorganic dielectric layer as taught by Uemura into the gas discharge panel as disclosed by Aoki in order to advantageously prevents cracking in the protection layer.

Regarding claim 5, the protective layer composed of a bi-layer of  $\text{TiO}_2$  has a bond distance that is smaller than the wavelength of an atom vacuum ultra violet array.

Regarding claim 6, the dielectric constant of polysiloxane is less than 3 while the dielectric constant of  $\text{TiO}_2$  is greater than 14.

Regarding claim 7, the organic dielectric layer has a thickness of 15  $\mu\text{m}$  (Page 2 paragraph 41) while the inorganic layer is 1  $\mu\text{m}$  (Column 6 Table 1).

Regarding claim 8, the protective layer is 1  $\mu\text{m}$  thick. (Page 7 paragraph 138)

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Miyashita et al. (US 2004/0075388) discloses the use of an interlayer of AlN between the protection layer and the dielectric layer.

Tanaka et al. (US 6,160,345) discloses the use of a metal oxide layer in addition to the dielectric layer and the protection layer.


***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**JOSEPH WILLIAMS**  
**PRIMARY EXAMINER**